

Draft Environmental Assessment BCWMA Forest Restoration Project



Region 2
Montana Fish, Wildlife & Parks
3201 Spurgin Rd, Missoula, MT 59804
Phone 406-542-5500

Draft Environmental Assessment MEPA, NEPA, MCA 23-1-110 CHECKLIST

PART I. PROPOSED ACTION DESCRIPTION

1. Type of proposed state action:

Montana Fish, Wildlife & Parks (FWP) proposes to conduct forested habitat restoration treatments on 372 acres of the Blackfoot Clearwater Wildlife Management Area (BCWMA). Forest restoration would focus on returning forest conditions to within the historic range of variability by mimicking natural disturbance typical of the forest type and disturbance regime. The treatments would enhance aspen habitats, open up canopy for improved forage production, and improve forest resiliency by reducing fire risk and beetle infestation risk. Treatments would include salvage logging of mountain pine beetle infected trees, commercial thinning, fuels reduction (thinning, piling, and burning), prescribed burning, and removal of encroaching conifers within aspen clones. (Detailed description of the proposed action is in #8, below.)

2. Agency authority for the proposed action:

FWP is authorized by State law (Montana Code Annotated, or MCA) to own and manage lands as wildlife habitat. The land subject to this proposal is included in the Blackfoot-Clearwater Wildlife Management Area, which was originally purchased with funding sources from the Pittman-Robertson Act (P-R). Matching funds for acquisition of the BCWMA were provided by FWP from revenues generated by the sale of Montana hunting licenses. FWP uses budgeted license revenues, within spending authority granted each biennium by the Montana legislature, for maintenance of the BCWMA. FWP is authorized to use supplemental funds from various public and private sources, which may be awarded under specific conditions for individual maintenance and enhancement projects on the BCWMA or other properties. The Montana Fish and Wildlife Commission endorsed this proposal in November 2015, allowing FWP to proceed with further development and analysis of this proposed action, including completion of this Draft Environmental Assessment (EA).

BCWMA Management Plan

FWP manages this property primarily to provide important winter range for elk and deer, as outlined and described in the Application for Federal Assistance (Project W-30-L) and Management Plan for the BCWMA (on file at Region 2, FWP). The Management Plan directs FWP to manage for the maximum sustainable utilization of winter range by elk, mule deer and white-tailed deer following these standards:

- Soil condition and development will be maintained or enhanced;
- Adverse impacts to adjacent landowners will be reduced or mitigated;
- The condition of elk and deer populations will be maintained or enhanced;
- Elk and deer populations will be supported by natural winter forage;
- Adverse impacts on other resources such as fisheries, riparian habitats, water quality, native plant communities, and other animal populations will be avoided or mitigated.

The BCWMA Management Plan directs the Department to pursue opportunities to enhance these resources when compatible with elk and deer management. This Project would meet these standards by maintaining and enhancing forested conditions to promote forage quality and quantity, while maintaining components of thermal cover along the north and east portion of the BCWMA. This proposed Project would maintain and enhance forested grasses, woody browse understory, and aspen stands that historically provided winter forage for mule deer and elk but have been severely degraded by conifer encroachment and fire suppression over the last 90 years.

§87-1-201(9)(iv) and 87-1-621, MCA

FWP is required to implement programs that address fire mitigation, pine beetle infestation, and wildlife habitat enhancement, giving priority to forested lands in excess of 50 contiguous acres in any state park, fishing access site, or wildlife management area under the department's jurisdiction. The stand treatments proposed and described in this Draft EA were specifically identified as habitat improvement priorities. The Montana Legislature has provided FWP the means to accrue revenue from forest management activities and spend them to fund further management projects on its forested lands.

The Montana Statewide Elk Management Plan (2005)

The Montana Statewide Elk Plan directs FWP to improve elk habitat through projects designed to improve vegetative diversity and to maintain or increase carrying capacity on winter range. This proposed Project would work toward meeting this goal by restoring aspen stands, removing shade tolerant conifers encroaching on historically open and fire adapted ponderosa pine and larch stands, increasing recruitment of grass and woody browse understory in treated stands, removing mountain pine beetle infected ponderosa pine, and reducing the probability of intense stand replacement fire events on the WMA.

The Montana State Wildlife Action Plan (2015)

The Montana State Wildlife Action Plan identifies community types, Focal Areas, and species in Montana with significant issues that warrant conservation attention. The plan is not meant to be an FWP plan, but a plan to guide conservation throughout Montana based on a Tiered prioritization of community types and threats to those community types.

3. Name of project: BCWMA Forest Restoration Project

4. Anticipated Schedule:

Estimated Commencement Date: 8/1/2016

Estimated Completion Date: 12/31/2018

Current Status of Project Design (% complete): 75%

5. Location affected by proposed action (county, range and township):

Powell County

TRS 16N, 13W, Sec 31 & 32; and 15N, 13W, Sec 5, 7, 8, 17, 18.

Project is located within the Blackfoot Clearwater Wildlife Management Area (Figures 1 & 2).

6. Project size--estimate the number of acres that would be directly affected that are currently:

	<u>Acres</u>		<u>Acres</u>
(a) Developed:		(d) Floodplain	<u>0</u>
Residential	<u>0</u>		
Industrial	<u>0</u>	(e) Productive:	
(existing shop area)		Irrigated cropland	<u>0</u>
(b) Open Space/	<u>372</u>	Dry cropland	<u>0</u>
Woodlands/Recreation		Forestry	<u>0</u>
(c) Wetlands/Riparian	<u>0</u>	Rangeland	<u>0</u>
Areas		Other	<u>0</u>

Blackfoot-Clearwater WMA in the Blackfoot River Watershed

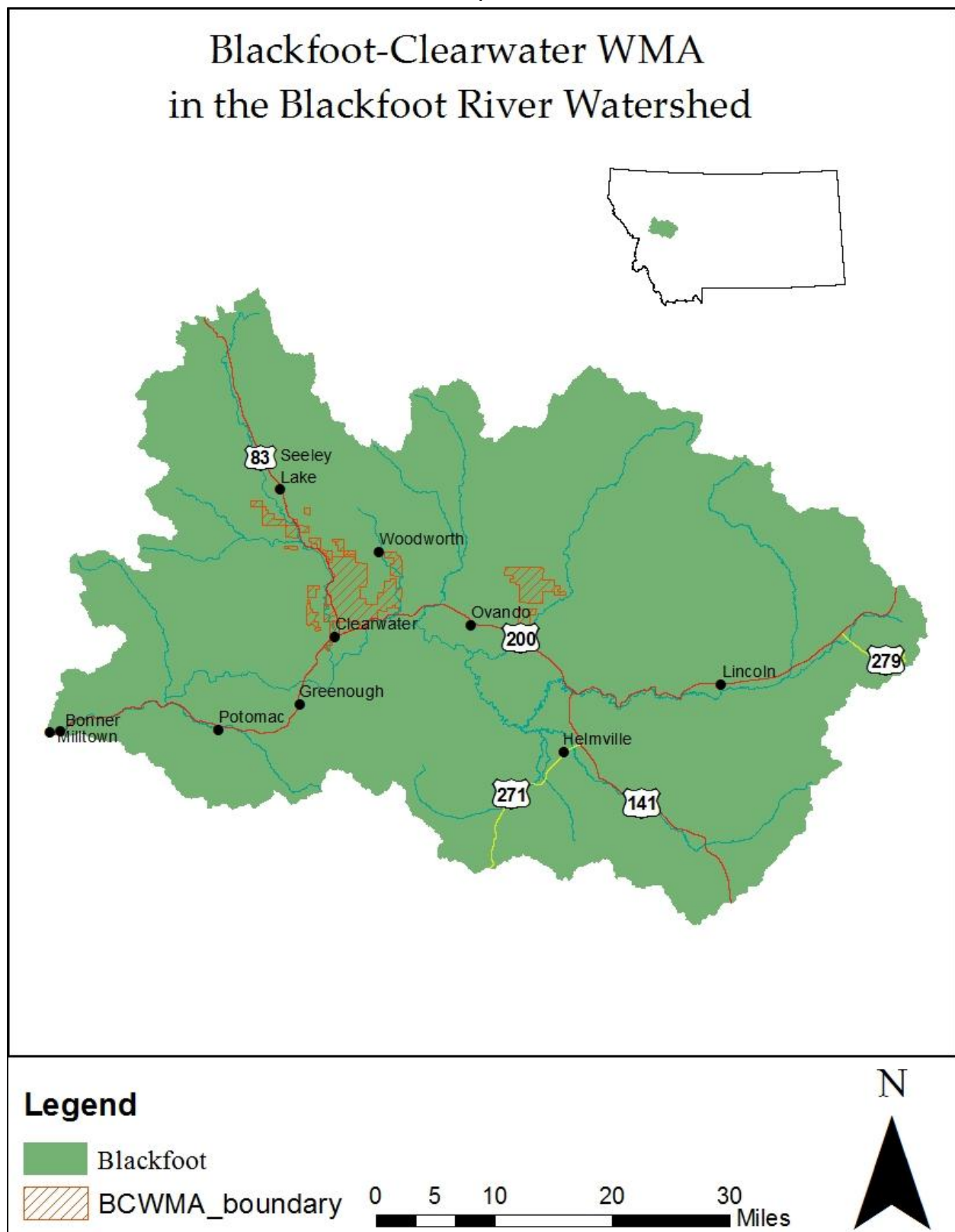


Figure 1. The BCWMA located in Montana's Blackfoot River watershed

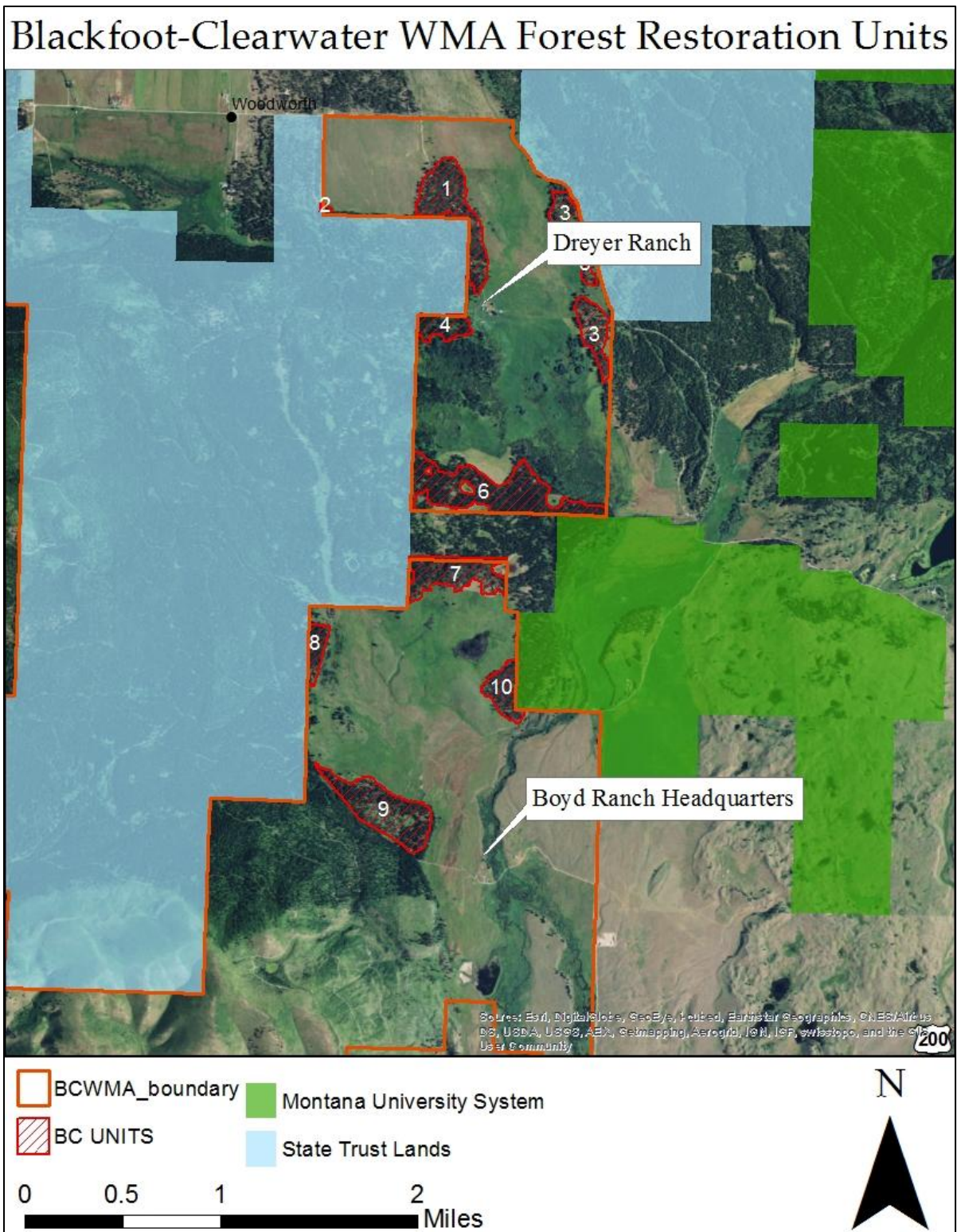


Figure 2. The BCWMA with surrounding landownership and the timbered stands (“BC Units”) proposed for forest restoration treatments.

7. Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction.

(a) Permits: Temporary Road Use Permits (DNRC, Bandy Ranch)

<u>Agency Name</u>	<u>Permits</u>
	None required

(b) Funding:

Agency Name Montana FWP

Funding Amount Costs to FWP for these forest habitat restoration treatments are expected to be covered by the sale of merchantable timber byproduct. Any revenue in excess of project costs will be deposited into the legislatively established FWP Forest Management Account to implement further forest management projects pursuant to the provisions of §87-1-201(9)(a)(iv), MCA.

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

MT DNRC	Fire Protection
Powell County Weed District	Noxious Weed Control

8. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action:

The Blackfoot Clearwater WMA is located in the Blackfoot Valley of west-central Montana, along both sides of the Missoula-Powell County line, with most of the property lying along the north side of Highway 200 between Blanchard Creek and the North Fork of the Blackfoot River (Figure 1). The nearest communities are Greenough, Seeley Lake, and Ovando. The wood products, ranching and recreation/tourism industries support the local economy. Missoula is the nearest major population center, located about 45 miles west of the BCWMA.

The BCWMA is the central and core winter range for a partially migratory elk herd with an average annual abundance of approximately 1,000 elk. Previous FWP studies of radio-collared elk have documented a yearlong home range of about 500,000 acres for this BCWMA elk herd, with habitually occupied summer ranges extending from the BCWMA into the Bob Marshall Wilderness Area and Mission Mountains. Thus, changes in elk habitat on the BCWMA may directly affect opportunities for the public to hunt and view elk across a much larger area including portions of the Lolo National Forest and accessible state and private lands.

Portions of the BCWMA also provide important winter range for migratory and resident populations of mule deer and white-tailed deer. Moose, black bear, mountain lion, wolves, mountain grouse, and furbearing species are common on the property. Subject lands provide habitat for the recovering grizzly bear population. Nearly 200 wildlife species were documented on the BCWMA in the 1990s (checklist is available from the FWP's Region 2 headquarters).

The BCWMA comprises about 35,043 acres, with 22,527 acres (64%) in fee-title ownership, 6,849 acres (20%) under FWP conservation easement and owned by DNRC, and 5,675 (16%) leased acres. The stands subject to this proposal lie on the northern and eastern portion of the WMA between the Dreyer and Boyd ranches and are adjacent to private and DNRC lands (Figures 1 – 2).

The subject stands were historically comprised of an overstory of shade-intolerant ponderosa pine and western larch interspersed with more shade tolerant Douglas-fir. An understory complex of shrub and grass plant communities were maintained by a high frequency (fire return interval of 0-35 years), low intensity fire regime. A comparison of 1939 and 2009 aerial photos indicates that the plant communities have shifted dramatically since fire suppression began approximately 90 years ago.

Today, <50 year old Douglas-fir and second growth ponderosa pine dominate the understory of historical ponderosa pine and larch stands; shade tolerant conifers have encroached on understory grasses and aspen stands within the Project area. Recently, shade tolerant conifer understory have developed and degraded the stands' value as ungulate winter range and now make the remnant ponderosa pine and larch vulnerable to intense stand replacement crown fires. Such an intense wildfire would likely damage the stands' thin organic soils, and retard shrub, aspen, and grassland recovery. High intensity crown fire would also threaten the large and older age class larch and ponderosa pine as shade tolerant understory trees are now large enough to serve as ladder fuels carrying ground fires to the crowns of large remnant trees.

Several of the ponderosa pine stands proposed for treatment have been negatively affected by a mountain pine beetle outbreak that occurred between 2006 and 2013. The resulting condition of decimated second growth pine has created extensive standing and fallen woody debris. These heavily stocked stands of dead and dying trees further increase the risk of intense stand replacement fire on the WMA and could potentially damage soils and understory vegetation.

A variety of palatable shrub spp. (including native Redosier dogwood, Rocky Mountain maple chokecherry, serviceberry, snowberry, and other browse species) still occur on or adjacent to subject stands and are expected to be recruited following treatment. Idaho fescue, rough fescue, and bluebunch wheatgrass are the dominant grass species and still occur where adequate sunlight penetrates the conifer over and mid stories. Another important stand type includes smaller aspen groves and individual patches within the Project area that are declining due to conifer encroachment over the last 90 years.

FWP proposes to mechanically thin the shade-tolerant understory species (primarily Douglas fir) from below while favoring retention of dominant and co-dominant larch, ponderosa pine, and older age-class Douglas fir. In ponderosa pine stands second growth and beetle killed pine will be removed from the understory while favoring dominant and co-dominant ponderosa pine. Patches of younger trees and snags will be retained within thinning units to provide cover for wildlife and to more closely mimic vegetative mosaics typical of stands maintained by high frequency, low intensity fire regimes. In some stands, slash would be left on site but pulled away from the boles of retained trees to allow for the possibility of prescribed fire in the future. Stand 10 has been identified for a prescribed burn following forestry treatment. Stand 10 lies adjacent to the state university system owned Bandy Ranch where similar forest management treatments will be applied. The University of Montana will hire a contractor to apply post-treatment burning on the Bandy Ranch and across stand 10 of the BCWMA in order to improve understory conditions. In other stands, slash will be piled and burned on site when conditions permit.

Access to the treatment units is along the FWP/DNRC BCWMA north/south road to the west of the subject parcels; all necessary access agreements will be in place by mid-May.

The proposed treatments were prescribed in cooperation with DNRC and with assistance from Northwest Consulting Inc. FWP area wildlife biologist and forester designed specific aspects related to wildlife habitat values.

For detailed maps and a description of current stand conditions and prescriptions see Appendix A.

9. Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:

Alternative A: No Action

If FWP decides not to proceed with the proposed action, the targeted stands on the BCWMA would not be treated. FWP expects that valuable wildlife habitat, including ungulate winter range would continue to deteriorate and the risk of high-intensity catastrophic wild fire would continue to increase.

Alternative B: Proposed Action

Conduct forested habitat improvement treatments on approximately 372 acres of the BCWMA as described in #8, above. Following this action, FWP anticipates that important ungulate winter range condition will be maintained and improved due to increased grass and woody browse understory recruitment. Treatment will also reduce the risk of high-intensity, stand replacement fire events that would remove the remnant large overstory trees, damage thin organic soils, slow grass and woody browse recruitment, and pose a significant risk to neighboring landowners.

PART II. ENVIRONMENTAL REVIEW CHECKLIST

1. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. **Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X			
c. **Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?		X				
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (attach additional pages of narrative if needed):

Short sections of existing roads will need to be improved to facilitate removal of timber and timber byproduct. These roads will be brought up to BMP specifications and no impacts to riparian areas or sediment delivery to or siltation of perennial water bodies will occur.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

2. AIR Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. **Emission of air pollutants or deterioration of ambient air quality? (Also see 13 (c).)			X			
b. Creation of objectionable odors?			X			
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. ***For P-R/D-I projects, will the project result in any discharge, which will conflict with federal or state air quality regs? (Also see 2a.)		X				
f. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (attach additional pages of narrative if needed):

Much of the slash and residual byproduct generated during the course of the proposed treatments will be burned on-site. The contractor will be required to hold a Master Hazard Reduction Agreement with DNRC for slash generated from treatment and qualified to apply prescribed fire.. The contractor will comply with Powell County open burning timing restrictions and comply with inter-agency slash treatment regulations.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

3. WATER Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. *Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?		X				
b. Changes in drainage patterns or the rate and amount of surface runoff?			X			
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. ****For P-R/D-I, will the project affect a designated floodplain? (Also see 3c.)		X				
m. ***For P-R/D-I, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a.)		X				
n. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (attach additional pages of narrative if needed):

Treating the subject stands may slightly alter the rate and volume of spring runoff and retained snowpack. Given the limited scale of the Project and condition of adjacent stands, this effect is expected to be extremely minor.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

4. VEGETATION Will the proposed action result in?	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X			
b. Alteration of a plant community?			X			
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X			
f. ****For P-R/D-J, will the project affect wetlands, or prime and unique farmland?		X				
g. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation (attach additional pages of narrative if needed):

The Project intent is to restore and diversify vegetation to benefit wildlife habitat condition and protect stands from high-intensity wildfire. Please see #8 above for a more detailed description of proposed treatments. Noxious weed spread will be mitigated by requiring equipment to be washed before entering the WMA, minimizing ground disturbance, immediately reseeding disturbed areas, and treating affected areas or areas at risk with herbicide during the Spring of 2017 and 2018.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

** 5. <u>FISH/WILDLIFE</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X			
c. Changes in the diversity or abundance of nongame species?			X			
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?			X			
h. ****For P-R/D-I, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f.)			X			
i. ***For P-R/D-I, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d.)		X				
j. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Fish and Wildlife:

Some wildlife will be temporarily displaced from the Project area while treatments are ongoing. Large and mobile species will likely move to secure, adjacent habitat. Treatments will occur after most bird species have nested and their clutch has fledged. Young of the year will be sufficiently mobile by late August and able to safely move away from treatment areas until work is complete.

Three federally Threatened and one federally Endangered species occur in the vicinity of the Project area.

Canada lynx – Stands proposed for treatment are located on low elevation, dry sites with moderate to low winter snow depths. There are no records of lynx detections on or immediately adjacent to the Project area and forest composition is not typical for lynx occupancy.

Grizzly bear – Grizzlies are commonly observed on and adjacent to the Project area. They are most sensitive to disturbance during the spring post-emergence period; treatments would primarily take place during late summer, fall, and winter. The Project area is already managed for extremely low open-road densities and there would be no net increase in open-road densities as a result of this Project. Contractors will not reside on site and will comply with standing Food Storage Orders. Following stand treatments, FWP expects greater serviceberry, chokecherry, hawthorn, huckleberry and forb production; these are all important summer/fall bear forage species.

Bull trout – Bull trout occur and spawn in Cottonwood Creek. No bull trout streams will be affected by the proposed treatments and no increase in sediment delivery to bull trout streams is anticipated as a result.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

B. HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Increases in existing noise levels?			X			
b. Exposure of people to serve or nuisance noise levels?			X			
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Noise/Electrical Effects (attach additional pages of narrative if needed):

Logging and trucking equipment will increase noise levels on the Project area while activities are ongoing. The Project area is relatively remote; the nearest occupied residence is >1/4 mile away. Merchantable timber byproducts will be transported out the North/South haul road and Woodworth road. Both road systems were designed for heavy truck traffic and periodically have experienced higher levels of truck traffic during the last 40+ years.

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflicted with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Use (attach additional pages of narrative if needed):

The proposed Project implements the BCWMA's Management Plan. The Project Area lies in a matrix of State, federal, and private ownerships that also actively manage their forested lands.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

8. <u>RISK/HEALTH HAZARDS</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan, or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?			X			
d. ***For P-R/D-I, will any chemical toxicants be used? (Also see 8a)		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk/Health Hazards (attach additional pages of narrative if needed):

Timber management activities are inherently dangerous. All contractors will be required to be certified as Accredited Logging Professionals with the Montana Logging Association.

9. <u>COMMUNITY IMPACT</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?			X			
d. Changes in industrial or commercial activity?			X			
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?			X			
f. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact (attach additional pages of narrative if needed):

This Project will create or sustain local jobs while the Project is ongoing. The Project will also benefit the successful applicant. Log hauling and contractor traffic will increase during the Project. Roads and other infrastructure that will be used by contractors were designed (and will be maintained) to support commercial logging and log transport activities.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?			X			
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased use of any energy source?			X			
e. **Define projected revenue sources						
f. **Define projected maintenance costs.						
g. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services/Taxes/Utilities (attach additional pages of narrative if needed):

The Project will increase state and local tax revenues from the sale of fuel and equipment and from employees' income. Fuel and electricity will be required to treat stands and process the timber byproduct.

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** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

** 11. <u>AESTHETICS/RECREATION</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?			X			
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. **Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report.)		X				
d. ***For P-R/D-I, will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c.)		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics/Recreation (attach additional pages of narrative if needed):

Some treated stands may be visible from nearby public roads. The Project's intent is to restore stands to more closely approximate historic conditions. No new roads will be constructed. The risk of catastrophic wildfire, which would also modify the scenic vista, will be reduced.

12. <u>CULTURAL/HISTORICAL RESOURCES</u> Will the proposed action result in:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. **Destruction or alteration of any site, structure or object of prehistoric historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. ****For P-R/D-I, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12.a.)						
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural/Historical Resources (attach additional pages of narrative if needed):

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

SIGNIFICANCE CRITERIA

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole:	IMPACT *					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)			X			
b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. ***For P-R/D-I, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e.)		X				
g. ****For P-R/D-I, list any federal or state permits required.						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Significance Criteria (attach additional pages of narrative if needed):

This Project would improve ungulate habitat conditions, restore historic forest characteristics, and reduce the risk of high-intensity wildfire on and adjacent to the BCWMA. Project treatments are directly adjacent to and enhanced by recent forest management projects conducted on DNRC lands.

This Project has been discussed with and has the support of agency partners, neighboring landowners and interested publics.

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM).

*** Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

PART III. NARRATIVE EVALUATION AND COMMENT

The BCWMA Forest Restoration Project would begin to implement the intent of the BCWMA Management Plan, the FWP Good Neighbor Policy, and FWP land management statute. Specifically, it would improve elk and deer winter range on the BCWMA, restore fire-adapted stands closer to historic condition, and reduce the risk of catastrophic wildfire on Project lands.

PART IV. PUBLIC PARTICIPATION

1. Describe the level of public involvement for this project if any, and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

The public will be notified in the following manners to comment on the Bearmouth FAS Proposed Improvement Project, the Proposed Action and alternatives:

- One legal notice in each of these newspapers: the, the *Independent Record* (Helena), *Missoulian*, and the *Seeley Swan Pathfinder* (respectively, FWP's newspaper of record, Region 2 FWPs newspaper of record and the local newspaper).
- Public notice on the Fish, Wildlife & Parks web page: <http://fwp.mt.gov> ("News," then "Recent Public Notices"). The Draft EA will also be available on this website, along with the opportunity to submit comments online.
- Copies of the Draft EA will be available at the Region 2 headquarters in Missoula and the State Headquarters in Helena.
- Copies of this environmental assessment will be mailed (or notification of its availability emailed) to neighboring landowners and other interested parties (individuals, groups, agencies) to ensure their knowledge of the Proposed Action.

A field tour will be held on May 24, 2016 from 10:00 a.m. to 3:00 p.m. Meet at the Boyd Ranch Headquarters on the BCWMA (see attached itinerary, Appendix B, pp 34-35).

This level of public notice and participation is appropriate for a project of this scope having no significant physical or human impacts and only minor limited impacts that can be mitigated.

2. Duration of comment period.

The public comment period will extend for thirty (30) days and will begin after publication of the legal notice in the *Missoulian*. **Comments will be accepted until 5:00 p.m. on June 20, 2016** and can be e-mailed to shrose@mt.gov, phoned to 406-542-5540, or mailed to this address:

Region 2 FWP
Attn: Sharon Rose
3201 Spurgin Ave
Missoula, MT 59804

PART V. EA PREPARATION

- 1. Based on the significance criteria evaluated in this EA, is an EIS required? (YES/NO)?
If an EIS is not required, explain why the EA is the appropriate level of analysis for
this proposed action.**

No. Based upon the above assessment which has identified a limited number of minor impacts to the physical and human environment that will be either for a short duration or that the affects of the propose Project can be mitigated below the level of significance, an EIS in not required and an environmental assessment is the appropriate level of review.

- 2. Name, title, address and phone number of the person(s) responsible for preparing the EA:**

Scott Eggeman
Wildlife Biologist
FWP, Region Two
PO Box 15 Seeley Lake, MT 59868
(406) 542-5542

- 3. List of entities consulted during preparation of the EA:**

MT DNRC
U.S. Forest Service
U.S. Fish and Wildlife Service

Appendix A

BLACKFOOT CLEARWATER WMA STAND PRESCRIPTIONS

Prepared by: Neil Simpson, Montana Department of Natural Resources and Conservation

Prepared for: Montana Department of Fish Wildlife and Parks

Date: January 28, 2016

Background:

FWP proposes to enhance forest habitat on approximately 372 acres of the Blackfoot Clearwater WMA located northeast of Ovando, Montana. The treatments would enhance aspen habitats, open canopy for improved forage production, and would improve forest resiliency by reducing fire risk and beetle infestation risk. Treatments would include salvage logging of mountain pine beetle infected trees, commercial thinning, fuels reduction (thinning, piling, and burning), and removal of encroaching conifers within aspen clones. The Project would be designed to minimize impacts to big game security and hiding cover.

This Project is consistent with statutory requirements of MCA 87-1-622 to “address fire mitigation, pine beetle infestation, and wildlife enhancement...” Timely salvage is an important feature of this Project, which could offset the costs of the fuels reduction and aspen enhancement components of the Project. Most dead trees no longer have value as sawlogs and their value as pulp logs is diminishing.

DNRC is assisting with this Project in the form of developing and providing the following stand level silviculture prescriptions. All prescriptions have been developed utilizing the above Project description as guidance.

Stand Number: 1	Location: S32 T16N R13W	Acres: 68
Stand Number: 2	Location: S31 T16N R13W	Acres: 4
Stand Number: 3	Location: S32 T16N R13W and S05 T15N R13W	Acres: 51
Stand Number: 10	Location: S08 T15N R13W	Acres: 22

Elevation: 4,000-4,200 **Slope: 0-5%** **Aspect(s): Flat, west**

Primary habitat type: 312, PSME/SYAL CARU

Soils: 371C Wildgen-Yreka gravelly loams, 271C Rumblecreek water complex (gravelly loam), 699D Bignell gravelly loams





Description of stands:

- **Forest composition:** 80% ponderosa pine, 10% western larch, 5% Douglas-fir, 5% other. Stands are single storied with a single canopy layer and very little understory. Regeneration primarily consists of a few scattered Douglas-fir trees. Due to the recent beetle mortality, stand composition varies with large openings up to about ½ acre in size, and areas that have high stocking.
- **Average size:** DBH 14" Height 85'. Some large trees over 36" are scattered throughout the units.
- **Stocking:** Moderate. Total canopy coverage ranges from 0% in beetle openings to 75% with an average of 50%. Trees per acre is approximately 75.
- **Basal Area:** live 80, Dead 30, total 105.
- **Snags and Coarse woody debris:** There are approximately 25 snags per acre. In many areas numerous large beetle killed trees have fallen over. Coarse woody debris is approximately 50 tons per acre, and is a hazardous fuel problem.

- **Insects/disease issues:** Over the last fifteen years mountain pine beetle has caused extensive mortality in these stands. Trees have been killed in a patchy distribution, resulting in some areas up to ½ acre in size having been completely killed while other areas suffered little mortality. It appears the current beetle epidemic has run its course, and no new beetle activity was noted during stand reconnaissance in 2015. Current risk of further beetle mortality is moderate because stand density and stocking has been reduced by the beetle kill.
- **Existing regeneration:** very little advanced regeneration exists.

Fire regime, succession, and fire risk: Stands are a typical low elevation low intensity fire regime with frequent fire return intervals. Historically this maintained open stands dominated by shade intolerant species. Regeneration and brush were killed by these frequent fires, perpetuating an open stand dominated by large trees. Current stand conditions are a result of past logging, fire exclusion, and the resulting beetle epidemic. Logging and fire exclusion resulted in more small trees per acre than would have been present under historic conditions. This overstocking in turn led to stands susceptible to bark beetle attack. The bark beetle epidemic has decreased stocking in these stands. It has also increased fire risk and fuel loading by adding an overabundance of downed trees on the forest floor.

Rare plants and noxious weeds: *Grindelia howellii* (howell's gumweed) is known to occur within the general area but no plants were found on field visits, nor were any specific locations noted on Montana Natural Heritage Tracker database. Noxious weeds are found along roadsides and within all units. Listed noxious weeds and other weeds specifically noted on field visits include; houndstongue, spotted knapweed, Canada thistle, and common mullein. Additionally, a large leafy spurge infestation exists south of the Project area.

Treatment Objectives:

- Reduce coarse woody debris fuel loading
- Desired future species composition: 80% ponderosa pine, 10% western larch, 5% Douglas-fir, 5% other species.
- Desired future stand structure: uneven aged
- Enhance growth and vigor of leave trees and expected regeneration.
- Capture value of dead and dying timber.
- Establish a new cohort of ponderosa pine in openings created by beetle mortality.

Prescribed Treatment:

- Silviculture system: Uneven aged
- Specific harvest treatment: Individual tree selection
- Details of treatment/Marking guidelines
 - Cut tree mark live trees with a band of paint at or above breast height and a mark at the base of the tree. Wildlife snags will be designated by prescription or marked to leave in a separate color.
 - Leave high value wildlife snags where they are available and do not pose a safety or fire hazard. Use the following guidelines:
 1. Leave all large old snags where safe to do so.
 2. Leave snags of the largest size class available.

3. Species preference to leave: western larch, ponderosa pine, Douglas-fir
 4. Leave snags with multiple tops, large branches, or are otherwise deformed.
 5. Leave large snags that have been recently killed and have broken off below 40' but above 10'.
- Recently killed ponderosa pine will be contract designated to harvest and does not need to be marked.
 - Reduce stand density to approximately 50 leave trees per acre. This is approximately 30' spacing but leave trees will be based on the following criteria and spacing will be variable.
 1. Species preference to leave: aspen, ponderosa pine, western larch, Douglas-fir, spruce, lodgepole pine
 2. Remove nearly all conifers from below and above the drip line of aspen trees, some conifers showing excellent wildlife habitat characteristics may be left.
 3. Remove suppressed and overtopped trees.
 4. Remove codominants that are in direct competition with larger healthier trees but retain vigorous codominants that are not directly competing with other trees.
 5. Remove dominant trees with poor form.
 - Large trees with multiple stems, crooks etc. provide wildlife values and should be left if they do not otherwise pose a forest stand health concern.
- Harvest method: Ground based harvest
 - Regeneration: Mechanical scarification in openings to achieve natural regeneration. Prescribed fire will be used on Stand 10 along with adjacent similar stands on the State University owned Bandy Ranch.
 - Hazard reduction: Hazard reduction will need to be a two pronged approach reducing both existing coarse woody debris and slash created from logging. Cumulative amounts of coarse woody debris left on site should be 5-10 tons per acre. The majority of fine slash from logging should be removed from the site. This is best accomplished through requiring the contractor to salvage 90% of blow down trees and whole tree skidding. However, other logging techniques that achieve the same result may be acceptable.

Stand Number: 6	Location: S05 T15N R13W	Acres: 109
Stand Number: 7	Location: S08 T15N R13W	Acres: 40
Stand Number: 8	Location: S07 T15N R13W	Acres: 16
Stand Number: 9B	Location: S17 and 18 T15N R13W	Acres: 48

Elevation: 4,000-4,100 **Slope:** 0-10% **Aspect(s):** North, East, South

Primary habitat type: 310, PSME/SYAL

Soils: 271C Rumblecreek water complex (gravelly loam), 71C Winfall gravelly loams, 99D Bignell Gravelly clay, 395D and E Rumblecreek gravelly loam



Description of stands:

- **Forest composition:** These stands all border grasslands and/or wetlands. The topography is rolling and variable, and forest composition varies with topography. South aspects and knobs are dominated by ponderosa pine while north aspects and swales have a predominance of western larch and Douglas-fir. Pothole wetlands are found throughout the stands.
 - Stands are multi storied with an overstory consisting primarily of ponderosa pine and western larch (80%). The understory consists primarily of Douglas-fir (90%). A cohort of relatively healthy trees, approximately 30' in height, exists in openings. Recent beetle activity has killed approximately 40% of the overstory ponderosa pine trees. Wetlands within and adjacent to the stands have their own distinct species composition comprised primarily of aspen, spruce, Douglas-fir and some ponderosa pine.
- **Average size:** Overstory DBH 15" Height 90'. Some large trees are found in the stand. Understory height 8' tall.
- **Stocking:** The overstory is moderately stocked. Approximate total canopy coverage ranges from 0% in beetle openings to 75% with an average of 40%. Trees per acre is approximately 70. The understory is overstocked with trees per acre reaching over 10,000 trees per acre in some places.
- **Basal area:** live 120 Dead 30 total 155.
- **Average age:** 100 years, some older trees are scattered around.
- **Snags and coarse woody debris:** There approximately 15 snags per acre. Coarse woody debris is approximately 50 tons per acre, and is a hazardous fuel problem.
- **Insects/disease issues:** Over the last fifteen years mountain pine beetle has caused extensive mortality in these stands. Trees have been killed in a patchy distribution. Some areas up to ½ acre in size have been completely killed while other areas suffered little mortality. It appears the current beetle epidemic has run its course and no new beetle activity was noted during stand reconnaissance in 2015. Current risk of further beetle mortality is moderate because stand density and stocking has been reduced by the recent beetle kill. Western spruce budworm has been active in the stands. Defoliation is most prominent in areas with high stocking in all canopy layers.
- **Existing regeneration:** This multi-aged stand has multiple age classes of regeneration. It generally exists in even aged, single species clumps. Regeneration of ponderosa pine and western larch is found in openings or under light canopy cover. The shade tolerant species Douglas-fir is found beneath an overstory canopy layer. The Douglas-fir regeneration has been defoliated by spruce budworm and is severely overstocked. Regeneration ranges in height from approximately 5' to 30' tall. Clumps are heavily stocked at 1,000-4,000 Trees per Acre.

Fire Regime, succession, and fire risk: Stands are within fire group 6, moist Douglas-fir habitat types. Historically these stands had a typical low elevation low intensity fire regime with frequent fire return intervals maintaining open stands dominated by shade intolerant species. Regeneration and brush were killed by these frequent fires perpetuating the open stand dominated by large trees. In the absence of frequent fire stand succession occurs resulting in a multi storied stand dominated by Douglas-fir. Current stand conditions are a result of past logging, fire exclusion, and the resulting beetle epidemic. This resulted in more trees per acre, and a smaller average size, than would have been present under historic conditions. This overstocking in turn led to stands susceptible to bark beetle attack. The bark beetle epidemic has decreased overstory stocking in these stands and increased fire risk and fuel loading by adding an overabundance of downed trees on the forest floor. Currently there is a severe fuel loading

problem created by a combination of overstocked Douglas-fir regeneration and high concentrations of deadfall.

Rare plants and noxious weeds: *Grindelia howellii* (howell's gumweed) is known to occur within the general area but no plants were found on field visits, nor were any specific locations noted on Montana Natural Heritage Tracker database. Noxious weeds are found along roadsides and within all units. Listed noxious weeds and other weeds specifically noted on field visits include; houndstongue, spotted knapweed, Canada thistle, and common mullein. Additionally, a large leafy spurge infestation exists south of the Project area.

Treatment Objectives:

- Reduce coarse woody debris fuel loading
- Encourage aspen growth and regeneration
- Desired future species composition: 35% ponderosa pine, 35% western larch, 15% Douglas-fir, 10% quaking aspen, 5% other species.
- Desired future stand structure: uneven aged
- Growth: Enhance growth and vigor of leave trees and expected regeneration.
- Capture value of dead and dying timber.
- Establish a new cohort of ponderosa pine and western larch regeneration in openings

Prescribed Treatment:

- Silviculture system: Uneven aged
- Specific harvest treatment: Individual tree selection
- Details of commercial treatment/Marking guidelines
 - Cut tree mark live trees with a band of paint at or above breast height and a mark at the base of the tree. 2 snags per acre will be marked to leave in a different color.
 - Recently killed ponderosa pine will be contract designated to harvest and does not need to be marked.
 - Reduce stand density to approximately 50 leave trees per acre. This is approximately 30' spacing but leave trees will be based on the following criteria and spacing will be variable.
 1. Species preference to leave: aspen, ponderosa pine, western larch, Douglas-fir, spruce, lodgepole pine
 2. Remove nearly all conifers from below and above the drip line of aspen trees, some conifers showing excellent wildlife habitat characteristics may be left.
 3. Remove suppressed and overtopped trees following species guidelines.
 4. Remove codominants following species guidelines.
 5. Remove dominant trees to promote healthy ponderosa pine or western larch.
 6. Remove poorly formed dominant trees following species guidelines.
- Harvest method: Ground based harvest

- Regeneration: Mechanical scarification in openings to achieve natural regeneration.
- Understory treatment: Thin understory trees leaving all aspen, then western larch, ponderosa pine and Douglas-fir. No understory trees should be left under the dripline of overstory trees, or in other locations where they pose a ladder fuel risk. Leave trees should be based on species guidelines, and only healthy, vigorous trees should be retained. A clumpy distribution is expected.
- Hazard reduction: Hazard reduction will need to be a two pronged approach reducing both existing Coarse Woody Debris and slash created from logging. Cumulative amounts of Coarse Woody Debris left on site should be 5-10 tons per acre. The majority of fine slash from logging should be removed from the site. This is best accomplished through requiring the contractor salvage 90% of blow down trees and whole tree skidding. However, other logging techniques that achieve the same result may be acceptable.

Stand Number: 9A **Location:** S18 T15N R13W **Acres:** 20

Elevation: 4,000-4,100 **Slope:** 0-10% **Aspect(s):** Flat

Primary habitat type: 310, PSME/SYAL

Soils: 395 D and E Rumblecreek gravelly loam



Description of stands:

- This stand is attached to stand 9B. These stands are the same habitat type and logistically are the same. The difference in current forest composition and the need for different silviculture prescriptions is due to past timber harvest in stand 9A.
- **Forest composition:** The stand is multi storied with openings. Dominant trees in the stand are approximately 50' tall and primarily consist of western larch (65%). Douglas-fir (25%) and ponderosa pine (10%) are also present. Below these dominant trees are trees of varying age and sizes, creating a continuous canopy layer reaching to the ground. Understory trees consist of Douglas fir (80%), western larch (10%) and ponderosa pine (10%). Quaking aspen is present on favorable microsites.
- **Average size:** Overstory DBH 12" Height 50'.
- **Stocking:** The stand is moderately stocked. Approximate total canopy coverage ranges from 0% in openings to 100%. The understory is overstocked, reaching over 10,000 trees per acre in some places.
- **Basal area:** 75 square feet per acre. Dead trees that have fallen over below 4'6" in height have not been tallied into basal area
- **Average age:** 50 years (dominant trees)
- **Snags and coarse woody debris:** Few snags and limited coarse woody debris exist.
- **Insects/disease issues.** Due to the relatively young age and limited ponderosa pine on site mountain pine beetle mortality is very limited in this stand. Western spruce budworm has defoliated many of the Douglas-fir trees in the stand. Understory trees are the most heavily defoliated.
- **Existing regeneration:** This entire stand appears to be regeneration from a harvest that took place approximately 50 years ago. Western larch was the first to establish itself and is now the dominant species in the stand. Douglas fir has continued to regenerate on the site. Resulting in an overstocked, less vigorous stand.

Fire Regime, succession, and fire risk: Stands are within fire group 6, moist Douglas-fir habitat types. Historically these stands had a typical low elevation low intensity fire regime with frequent fire return intervals. This maintained open stands dominated by shade intolerant species. Regeneration and brush were killed by these frequent fires perpetuating the open stand dominated by large trees. In the absence of frequent fire stand succession occurs resulting in a multi storied stand dominated by Douglas-fir. Current stand conditions are a result of past logging, and fire exclusion. Logging initiated this stand and fire exclusion has resulted in much heavier stocking than would have been present under historic conditions. Currently there is a severe ladder fuel problem and it is likely a fire in this stand would kill the majority of trees.

Rare plants and noxious weeds: *Grindelia howellii* (howell's gumweed) is known to occur within the general area but no plants were found on field visits, nor were any specific locations noted on Montana Natural Heritage Tracker database. Noxious weeds are found along roadsides and within all units. Listed noxious weeds and other weeds specifically noted on field visits include; houndstongue, spotted knapweed, Canada thistle, and common mullein. Additionally, a large leafy spurge infestation exists south of the Project area.

Treatment Objectives:

- Encourage aspen growth and regeneration

- Desired future species composition: 50% western larch, 30% ponderosa pine, 10% Douglas-fir, 10% quaking aspen, 5% other species.
- Desired future stand structure: uneven aged
- Growth: Enhance growth and vigor of leave trees and expected regeneration.
- Capture value of dead and dying timber.
- Establish a new cohort of western larch and ponderosa pine regeneration in openings

Prescribed Treatment:

- Silviculture system: Uneven aged
- Specific harvest treatment: Commercial thin
- Details of treatment/Marking guidelines
 - Leave tree selection will be performed by the contractor, non-commercial trees must be cut according to the same criteria.
 - Reduce stand density to approximately 195 leave trees per acre. This is approximately 15' spacing but leave trees will be based on the following criteria and spacing will be variable.
 1. Species preference to leave: aspen, western larch, ponderosa pine, Douglas-fir, spruce, lodgepole pine
 2. Remove nearly all conifers from below and above the drip line of aspen trees, some conifers showing excellent wildlife habitat characteristics may be left.
 3. Remove suppressed and overtopped trees following species guidelines.
 4. Remove codominants following species guidelines.
 5. Remove dominant trees to promote healthy ponderosa pine or western larch.
 6. Remove poorly formed dominant trees.
- Harvest method: Ground based harvest
- Regeneration: Mechanical scarification in openings to achieve natural regeneration.
- Hazard reduction: Hazard reduction may be achieved by whole tree skidding or trampling of logging slash. Maintain approximately 5-10 tons of coarse woody debris and approximately ½ of the fine slash on site.

Stand Number: 4 **Location:** S5T15N R13W **Acres:** 20

Elevation: 4,000-4,100

Slope: 0-10%

Aspect(s): Flat

Primary habitat type: 310, PSME/SYAL

Soils: 371C Wildgen-Yreka Gravelly loams

Description of stands:

- **Forest composition:** The stand is single storied. Quaking aspen is sporadically located throughout the stand comprising less than 5% of total trees per acre. The stand is comprised of western larch at approximately 60%, Douglas-fir at 25% and live ponderosa pine at approximately 15%.
- **Average size:** DBH 16" Height 75'. Some large trees up 40" DBH exist within the stand.
- **Stocking:** The stand is moderately stocked at approximately 105 trees per acre, approximate total canopy coverage ranges is 50%.
- **Basal area:** 140 square feet per acre
- **Average age:** 100 years (dominant trees)
- **Snags and coarse woody debris:** Approximately 2 snags per acre exist. Approximately 5 tons of coarse woody debris per acre exists.
- **Insects/disease issues.** Mountain pine beetle has killed numerous large (24"+) ponderosa pine but no beetle attacks from the summer 2015 were evident during field visits in December 2015. Based on the relatively small percentage of Douglas-fir and ponderosa pine current bark beetle risk is low to moderate. Current risk of significant spruce budworm defoliation is low due to the single storied nature of the stand and the relatively low percentage of Douglas-fir, true firs and spruce trees in the stand.
- **Existing regeneration:** Only limited regeneration exists. It is generally Douglas-fir which is in poor health due to spruce budworm defoliation.

Fire Regime, succession, and fire risk: Stands are within fire group 6, moist Douglas-fir habitat types. Historically these stands had a typical low elevation low intensity fire regime with frequent fire return intervals. This maintained open stands dominated by shade intolerant species. Regeneration and brush were killed by these frequent fires perpetuating the open stand dominated by large trees. In the absence of frequent fire stand succession occurs resulting in a multi storied stand dominated by Douglas-fir. Current stand conditions are a result of past logging, and fire exclusion. Currently the likelihood of a stand replacing fire is moderate. There is little in the way of ladder fuels and crown spacing is open enough to reduce the likelihood of a stand replacing fire. Under most conditions a ground fire would be expected in this stand. However, under the right conditions a stand replacing fire could occur.

Rare plants and noxious weeds: *Grindelia howellii* (howell's gumweed) is known to occur within the general area but no plants were found on field visits, nor were any specific locations noted on Montana Natural Heritage Tracker database. Noxious weeds are found along roadsides and within all units. Listed noxious weeds and other weeds specifically noted on field visits include; houndstongue,

spotted knapweed, Canada thistle, and common mullein. Additionally, a large leafy spurge infestation exists south of the Project area.

Treatment Objectives:

- Encourage aspen growth and regeneration
- Desired future species composition: 50% western larch, 30% ponderosa pine, 10% Douglas-fir, 10% quaking aspen, 5% other species.
- Desired future stand structure: Uneven aged
- Growth: Enhance growth and vigor of leave trees
- Capture value of dead and dying timber.

Prescribed Treatment:

- Silviculture system: Uneven aged
- Specific harvest treatment: Commercial thin
- Details of treatment/Marking guidelines
 - Cut tree mark trees with a band of paint at or above breast height and a mark at the base of the tree. 2 snags per acre will be marked to leave in a different color.
 - Reduce stand density to approximately 70 leave trees per acre. This is approximately 25' spacing but leave trees will be based on the following criteria and spacing will be variable.
 1. Species preference to leave: aspen, western larch, ponderosa pine, Douglas-fir, spruce, lodgepole pine
 2. Remove nearly all conifers from below and above the drip line of aspen trees, some conifers showing excellent wildlife habitat characteristics may be left.
 3. Remove suppressed and overtopped trees.
 4. Remove codominants that are in direct competition with larger healthier trees but retain vigorous codominants that are not directly competing with other trees.
 5. Remove dominant trees with poor form
- Harvest method: Ground based harvest
- Regeneration: Not a goal of this treatment
- Hazard reduction: Hazard reduction may be achieved by whole tree skidding or trampling of logging slash. Maintain approximately 5-10 tons of coarse woody debris and approximately ½ of the fine slash on site.



Blackfoot-Clearwater WMA Forest Restoration Project

For further information or questions, please contact Scott Eggeman at 406-531-6759 or seggeman@mt.gov

Field Tour Itinerary - Tuesday, May 24, 2016

Presenters - Scott Eggeman, Blackfoot Area Wildlife Biologist; Jason Parke, MT FWP forester

10:00 a.m. - Welcome and introductions at the Boyd Ranch headquarters (see attached map)

10:30 - Unit 9A and 9B, open discussion and questions on stand description and silvicultural prescriptions.

11:45 - Unit 8, brief stop and open discussion/questions on stand description and silvicultural prescriptions.

12:15 - Unit 6, lunch stop, open discussion and questions on stand description and silvicultural prescriptions.

1:10 p.m. - Dreyer Ranch, Units 1 & 4, open discussion and questions on stand description and silvicultural prescriptions.

2:15 - Conclude tour, final thoughts/questions on the proposed forest restoration project.

2:30 - Back to Boyd Ranch/depart.

Blackfoot-Clearwater WMA Forest Restoration Units

